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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/669,664	09/26/2000	Ryuji Nurishi	865.4499	4752

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EXAMINER

RAIZEN, DEBORAH A

ART UNIT PAPER NUMBER

2873

DATE MAILED: 08/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/669,664

Applicant(s)

NURISHI, RYUJI

Examiner

Deborah A. Raizen

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The disclosure is objected to because of the following informalities:

a) The symbol ΔY represents different quantities in different parts of the disclosure: On p. 17 (line 7) ΔY is defined as the amount of aberration. On p. 23 (lines 18, 19) ΔY is defined as the amount of image-shake correction. The two quantities do not appear to be equal and should, therefore, be represented by different symbols.

b) The quantity α'_k , appearing in Equations (b), (j), and (k) (pp. 18, 19), is not defined.

c) The symbol E_{4s} , appearing on page 23, appears to represent the same quantity as the symbol E (p. 29, line 13). It would better if the same symbol were used throughout the disclosure.

d) The first lens subunit of the fourth lens unit is represented sometimes as $4F$ (e.g. the figures and p. 30, line 21) and sometimes as $4S$ (e.g. p. 25, p. 31 and Claim 7). It would better if the same symbol were used throughout the disclosure.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 6, and 9 (and dependent claims 2-5, 7, 8, 10 and 11) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 1, the clause “an image is displaced by moving said first lens subunit in such a way as to have a component perpendicular to an optical axis of said zoom lens” is indefinite. In particular, it is not clear what has a perpendicular component. Examiner suggests the following language instead: “an image is displaced by moving said first lens subunit perpendicularly to an optical axis of said zoom lens.”

In Claim 6, the terms “converted inclination angle of incidence” and “converted inclination angle of exit” are indefinite. In particular, “converted” is not defined in the disclosure.

In Claim 9, the quantity “rate of variation of lateral magnification” is indefinite. The term “rate” is not defined in the disclosure. Furthermore, no units are provided for the rate in the numerical examples in the specification. Examiner suggests the definitions of Z2 (and Z) as found in Sensui (5,748,384) (Abstract) or in Shibayama (5,694,253) (column 4, lines 35-40; Z is defined in lines 10-14).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki (6,025,962). Suzuki discloses a zoom lens system having, in order from the object side, four lens units having refractive powers, in order from the object end: positive (G_1), negative (G_2), positive (G_3), and positive (lens groups G_4 and G_5) (Figure 1 and columns 14, 15, Table 1). The second and third lens units, G_2 and G_3 , move along the optical axis when zooming (Figure 1). The fourth lens unit has a first lens subunit (G_4), of negative refractive power, that moves in a direction substantially perpendicular to the optical axis in order to stabilize the image (column 3, lines 15-18). The Suzuki zoom lens, therefore, has all the limitations of Claim 1.

In regard to Claim 2, in the Suzuki zoom lens, first embodiment, the first lens subunit (G_4) consists of one positive lens (doublet with surfaces 23-25) and one negative lens (lens element with surfaces 21, 22) (See Figure 1 and Table 1). In regard to Claim 3, the first lens subunit (G_4) consists of one positive lens (lens element with surfaces 24,25) and two negative lenses (lens element 21, 22 and lens element 23,24) (Figure 1 and Table1).

In regard to Claim 4, Suzuki discloses that the fourth lens unit (lens groups G_4 and G_5) has a second lens subunit (G_5) of positive refractive power on the image side of the first lens subunit (G_4)(Figure 1).

In regard to Claim 5, Suzuki discloses that the third lens unit (G_3) is of positive refractive power. Also, in Suzuki Embodiment 1, the fourth lens unit (lens groups G_4 and G_5) consists of, in order from object side to image side, the first lens subunit of negative refractive power (G_4), and the second lens subunit (G_5) of positive refractive power.

In regard to Claim 7, Suzuki discloses the same condition for the first lens subunit (lens group G_4) (column 10, condition 12).

In regard to Claim 8, in Suzuki Embodiment 1 the second lens subunit (lens group G_5) satisfies the condition of Claim 8. When the Abbe number for the negative lens with surfaces 28 and 29 is subtracted from the mean of the Abbe numbers for the three positive lenses, the result is greater than 10:

$$(82.52 + 67.87 + 60.23)/3 = 70.207$$

$$70.207 - 27.63 = 42.58$$

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (6,025,962) in view of Schroeder (4,054,372). Suzuki teaches the lens structure recited in Claim 1, but does not specifically teach a casing holding the zoom lens. Schroeder, however, teaches a zoom lens with multiple lens units and specifically includes a zoom lens casing (Figures 4 and 5) in a photographing apparatus (camera) (column 1, lines 36, 39). Furthermore, Schroeder teaches that casing (barrels) could be useful for zooming and focusing (column 2, lines 3-6). It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide a casing with the Suzuki zoom lens because, as taught by Schroeder, it is well known to use casings with zoom lenses.

Allowable Subject Matter

Claim 10 would be allowable if rewritten

- 1) to overcome the rejection of Claim 1 under 35 U.S.C. 112, second paragraph, set forth in this Office Action; and
- 2) to include all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of Claim 10, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in Claim 10. For example, these features include the detailed structure recited in Claim 1 and also

an extender conversion optical system insertably and detachably disposed on the image side of the first lens subunit.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Terasawa et al. (5,790,316) teaches that, in a zoom lens having four lens units, image-forming magnifications of the second and third units vary within a range including $-1\times$ during the variation of magnification (column 1, lines 26-28). Usui et al. (5,751,497) teaches that $5 < Z_2$, where Z_2 is the variation of lateral magnification of the second lens unit (column 5, condition (4), and column 4, lines 63,64). Kitagishi et al. (4,639,096) teaches that, in a zoom lens having four lens units, $0.5 < Z_2/Z < 1$, where Z_2 is defined as above and Z is the zoom ratio of the zoom lens (Abstract). Furthermore, Kitagishi teaches that such a limitation is necessary to avoid objectionable increases in the variation of aberrations with zooming and in the diameter of the aperture. (column 3, lines 49-55).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah A. Raizen whose telephone number is (703) 305-7940. The examiner can normally be reached on Monday through Friday, from 8 a.m. to 4:30 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

A handwritten signature in black ink, appearing to read "Scott J. Sugarman". The signature is stylized with a large, looped "S" and a cursive "J".

Scott J. Sugarman
Primary Examiner

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August 16, 2002